Before the

Federal Communications Commission

Washington, D. C. 20554

In the Matter of	)
Modernizing the E-rate	) WC Docket No. 13-184
Program for Schools and Libraries	

Comments by

Illinois Fiber Resources Group

Related to the E-Rate 2.0 Notice of Proposed Rulemaking

September 13, 2013

FCC NOTICE FOR PROPOSED RULEMAKING

WC Docket No. 13-184

Illinois Fiber Resources Group (iFiber) is a not-for –profit corporation that provides telecommunication transport services over a 900 mile fiber network in northwest Illinois. The network only serves public sector entities and was developed with a grant under the Broadband Technology Opportunity Program.

In general, iFiber is supportive of changing E-rate rules to further support schools and other government entities in having access to affordable broadband service. Specific comments related to the Notice of Proposed Rulemaking follow.

NOTE: Individual Paragraphs (or excerpts) of the NPRM will be copied herein, followed by the Comment on each.

20. We seek comment on what performance measure or measures we should adopt to support our proposed goal of ensuring eligible schools and libraries have affordable access to high-capacity broadband at speeds that will support digital learning. We also seek comment on how best to perform the relevant measurements.

Comment: Measurement of price/broadband speed ratios could be compared across states/regions, to determine acceptable norms. Differences between urban/rural rates will occur and need to be addressed by the program. Differences between affordability levels for high income vs. low income areas will also need to be addressed. Additionally, some measurement of available applications will also be relevant to address.

23. We seek comment on adopting the SETDA target of ensuring that schools have 100 Mbps per 1,000 users increasing to 1 Gbps per 1,000 users.[48] SETDA also recommends that a school within a district have Wide Area Network (WAN)[49] connectivity to other schools within their district of at least 10 Gbps per 1,000 students and staff by 2017-2018.[50] We also seek comment on adopting that target for WAN connectivity.

Comment: The SETDA targets are not sufficiently ambitious, particularly for secondary schools, where job training for data-intensive industries will be needed. If we assume that, at any one time, 25% of a student population is engaged in on-line interactive training, and that for each student, 20Mbps is needed, then a 1,000 student school would need 5Gbps to allow one-fourth of their students to be actively engaged in on-line training via Internet sources.

24. More specifically, we seek comment on whether the SETDA targets are appropriate for all schools, or whether we should set some other minimum levels of broadband speed necessary to meet our proposed goal, and what those levels should be.

Comment: In the comment to 23 above, the proposed metric would be 5Mbps per student. A school with 500 students would need 2.5Gbps. A school with 100 students would need 500Mbps.

25. We also seek comment on the appropriate bandwidth target for libraries. According to the Gates Foundation, the State Library of Kansas has developed a broadband capacity tool that recommends that all libraries have a minimum of 1 Gbps Internet connectivity by 2020 and recognizes that libraries with a large number of connected users will likely need even greater capacity.[52]

Comment: Libraries vary widely in size and access to the Internet. At least 20Mbps per Internet station should be the short term target.

27. Should we define connectivity in Mbps of wireless capacity available per-student in classrooms, school libraries, and other areas of schools? Should these match the Internet or WAN connectivity recommendations of SETDA? For example, building off SETDA's 2017 recommendation of 100 Mbps Internet connectivity per 1000 students, should we aim for 1 Mbps of wireless capacity per 10 students in classrooms and other learning spaces?

Comment: Within the school building, wireless Internet capacity should equal that of wired Internet capacity. Otherwise, wireless will be treated as a nice-thing-to-have, rather than a 21st Century classroom standard. Additionally, as more schools transition to 1:1, the wireless environment must be able to perform at the same levels as wired classrooms so as not to disrupt the learning experience.

28. Should we adopt latency, jitter and packet loss performance requirements tailored to the specific uses of broadband connectivity by schools and libraries to ensure successful learning experiences? If so, what should such requirements be?

Comment: E-Rate should establish latency, jitter, packet loss, and other standards to ensure quality of service. These standards – under ideal circumstances – should be set in keeping with a level sufficient to ensure conversational experience while streaming 3D and/or 4K (or other appropriate standard).

31. We seek comment on additional ways to update the FCC Form 471 to provide information necessary to monitor and measure our proposed goal.[57] Should we require that E-rate applicants provide specific information about the bandwidth or speed for which they seek funding? Should we make that information publicly available?

Comment: If the end goal is providing more information, resources, speed, etc., to more schools and more libraries, then applicants should not be required to complete extensive paperwork geared towards data collection. Such requirements would likely decrease the end-user's flexibility and increase the amount of time, overhead, and knowledge required to complete E-Rate forms.

32. Should we adopt additional measures based on information we gather? For example, should we measure the difference in each school's or library's baseline capacity and speed for each workstation or device over a specified time period?

Comment: Yes, we agree with measuring the growth over time, and also the idea of measuring capacity and speed per workstation/device.

33. We seek comment on whether there are other methods we should consider adopting for measuring broadband performance, including not only bandwidth available but actual usage as well. (and)

34. In the alternative, should we require some or all E-rate applicants to have dedicated equipment measuring performance to and within each of their buildings?

Comment on 33 and 34: Yes, it would be recommended to measure actual usage. Most institutional users of the Internet have some level of performance measurement as part of their equipment and capabilities.

37. For example, to measure availability, should we use the National Broadband Map to estimate what fraction of schools and libraries have access to at least one broadband provider within the same census block offering broadband at speeds that meet our proposed performance metrics?

Comment: Use of current maps is not recommended, We do not believe the National Broadband Map – which may rely on self-reported, unverified speeds – is an accurate means of determining robust, reliable, and affordable bandwidth.

39. We also seek comment on whether the Commission should measure compliance with its "lowest corresponding price" rule as a measure of affordability to ensure that service providers are providing schools and libraries with the lowest corresponding price for E-rate supported services that a provider charges to a similarly situated non-residential customer.

Comment: Yes.

40. *Educational Impact Measurements.* Is there a way to measure how success in the classroom is affected by access to E-rate funding or services supported by E-rate?

Comment: This doesn't seem to be part of the FCC's charter.

43. We seek comment on what performance measure or measures we should adopt to support the goal of maximizing the cost-effectiveness of purchases made using E-rate funds. Should we measure the value delivered to schools and libraries with support from the E-rate program by tracking the prices and speed of the broadband connections supported by the program?

Comment: Yes, this is recommended.

47. We seek comment on what performance measure or measures we should adopt to support the proposed goal of streamlining the administration of the E-rate program.

Comment: We agree with the objective of streamlining, but also see the importance of administrative safeguards, and do not see an obvious solution.

54. We also seek comment on essential definitions for purposes of measurement. When considering different policy outcomes, what are the key concepts that require a formal common definition upfront to enable more desirable measurements (*e.g.*, "per school," "per-student," "per patron")?

Comment: We think "per student" and "per patron" are more significant than per school or library.

64. Given that requests for E-rate support substantially exceeds available funding,[106] in this section of the NPRM, we seek comment on various options for modernizing the E-rate program to achieve our proposed goal of ensuring that schools and libraries have affordable access to high-capacity broadband.

Comment: Paragraphs 60-64 bring up crucial topics. We would like to highlight two proposed ideas:
- We endorse the continuing importance of the Discount Matrix, but with this caveat: We believe the importance of secondary school job-training is paramount, and consequently, we propose that the Discount Matrix be adjusted for secondary schools. The objective would be to allow more schools to receive a higher percentage discount than the current matrix. We would suggest that 40% discount become 50%; 50% become 60%; 60% become 70%; and 70% become 80% discounted.
- We recommend that inside wiring/wireless be defined as a Priority One request rather than as the current Priority Two request.

67. *Technological architecture*. We begin by seeking general comment on the most efficient technological architectures that schools and libraries are likely to use for connectivity.
through
69. How do schools generally purchase connectivity? As an all-inclusive service? Or do schools purchase long-term indefeasible rights of use (IRUs) in physical infrastructure separately from managed services?[107] What approaches are most efficient?

Comment: There is no one-size-fits-all rule. Schools should be encouraged to issue RFPs, for the level of service needed. School districts should seek economies of scale by combining the needs of multiple locations. RFPs should allow for different technical solutions by different vendors, taking care to specify the level of in-house expertise that is available. Schools that are within 20 miles of BTOP assets should be required to explore the availability of last-mile lateral or wireless point-to-point access to the middle mile backbone.

71. By contrast, a school or library that leases dark fiber will not receive priority one support for the modulating electronics necessary to light the dark fiber.[109] To eliminate this disparity, we propose to provide priority one support for the modulating electronics necessary to light leased dark fiber.

Comment: We agree.

72. In order to maximize the options available for schools and libraries seeking to deploy fiber to their premises, we propose to provide priority one support for special construction charges for leased dark fiber, as we do for leased lit fiber.

Comment: We agree.

73. Additionally, although the E-rate program currently provides support for some

installation and special construction charges, it requires the cost of large projects to be spread over three years or more.112 The Commission's intent in requiring the cost to be spread over multiple years was to reduce the demand on the fund, but it may have the unintended consequence of deterring efficient investments, including the deployment of fiber. Should we continue to require that large installation and construction costs be spread over multiple years? And
74. ..Is there a limit to the amount of funding we should provide to any one library, school or school district over a certain amount of time for construction and installation costs?

Comment: It would likely help more schools to pursue long-term cost-effective broadband if payment could be made upfront. Understanding the potential (negative) impact that could have on a single year's USAC funding availability, the counter-argument is that, if a school takes this step, then it should not need significant amounts of USAC funding for a subsequent number of years. Regarding potential limits of funding for any one entity, the payback should be not more than 7 years, and ideally closer to 4 or 5. In other words, for the combined cost of 7 years of high-speed broadband services (or less than 7), the entity should be able to pay for 20 years of connectivity in a construction/IRU solution, with the only costs being for maintenance and equipment refresh. If this standard cannot be met, then a construction/IRU solution would not seem worth doing.

75. We also seek comment on whether prioritizing special construction charges to deploy fiber or other technologies from middle mile networks to schools and libraries (lateral fiber builds) by dedicating a specific amount of E-rate funding to support such deployment would help meet our connectivity goals.114

Comment: As mentioned in our comment to Paragraph 69, we think schools should be strongly encouraged to explore lateral or point-to-point wireless connection to middle mile networks. Schools could issue RFPs that seek their desired level of broadband, allowing for responses from managed services providers (so as not to be considered discriminatory) but emphasizing the school's desire to look at long-term solutions that take advantage of the middle mile network's presence in the wider community. Costs should be allowed to amortize over a longer period of time, if the cost/benefit ratio is appealing.

76. Is there a role for the states or Tribal governments to play in determining priority for such funds? For example, should we seek state and Tribal government recommendations for the neediest communities? … We specifically seek comment on any other factors to determine priority of funding for fiber lateral builds. We also seek comment on any potential requirements for receipt of specific support for fiber lateral builds. Should we, for example, require community access to high capacity broadband facilities in exchange for such funding?

Comment: We hold conflicting thoughts on state input (possibly not relevant for Tribal): On the one hand, it would be good to get localized (state) input on priorities. On the other, we are concerned whether asking for this input will put yet another burden on short-staffed state governments.

Another factor that could be used was mentioned in our comment on Paragraph 69; that is, to use proximity and use of BTOP middle mile as one of the priorities that schools should take into account in developing WAN planning.

We do think it would be appropriate to allow for, and encourage, community access to high capacity broadband facilities in exchange for funding.

77. If we prioritize some funding for new high-capacity broadband deployment should we be

technology neutral or should we prioritize fiber connectivity over other types of broadband connectivity? Should we give schools flexibility to select the best technology that meets their needs?

Comment: As further language in this Paragraph suggest, there may be some locations where fiber is simply cost-prohibitive. In these cases, high-speed wireless can provide a more realistic solution. However, for most locations, the use of fiber should be strongly encouraged.

79. *Wide Area Networks (WANS).*[117] Many schools and libraries use WANs to provide broadband connectivity to and among their buildings…
80. We seek comment on whether there are circumstances under which it will be more cost effective for schools and libraries to build or purchase their own WAN rather than to lease a WAN. We also seek comment on whether there might be occasions where building or purchasing their own WAN is the only way for schools and libraries to get broadband access. If so, we seek comment on whether we should lift our prohibition on schools and libraries building or purchasing their own WANs by removing section 54.518 of our rules, or amend that section of our rules to allow schools and libraries to build or purchase their own WANs under certain circumstances.[120] If the latter, we seek comment on the criteria we should use in determining whether to provide E-rate support to schools and libraries that purchase or build their own WANs.
81. … However, the *Healthcare Connect Fund Order* also imposed several safeguards on the program to ensure that consortia only exercised their option to self-construct when it was absolutely necessary.[122]

Comment: We think that building/purchasing of WANs by schools should be allowed. In the HCF, the RFP that is prepared must allow for either construction/purchase, or for lease or for services, and the cost for the approaches must be compared. This is not a lowest-cost determination in total, but the RFP must make clear that total costs for a comparative time frame must be measured. We add the reminder that, while an RFP may allow for differing approaches, vendors may or may not offer differing approaches, in which case the comparisons will be perhaps limited, but the fairness of the process has been documented. We think this is a valid approach for the schools as well.

83. Broadband connectivity within schools and libraries. We also seek comment on options to support connectivity within schools and libraries.

Comment: As we stated in our comment on Paragraph 64, we think that internal wiring/wireless to classrooms should be included in Priority One. As schools increasingly make access to computers available, it will significantly hamper their use if access to the Internet or WAN is not available.

88. *Recurring costs.* We also seek comment on the recurring costs of high-capacity broadband services.
89. How can we ensure that recurring costs come down sufficiently over time within the Erate program to make our proposed connectivity goals achievable and sustainable? Are the program's existing matching and competitive bidding requirements sufficient safeguards, or are further steps required? For example, should we phase in maximum per-megabit prices over time that are eligible for E-rate discounts, or set program-wide per-megabit price guidelines or targets?

Comment: There are a number of problems with setting maximum per-megabit pricing to qualify for funding. Regional and local differences in vendors' capabilities is one concern. In some cases, a vendor might raise prices to the maximum allowable. In other cases, there may be no vendor, or construction

approach, that can meet the standard in an area. We think a well-prepared RFP is the best approach to find out what the best price/performance solution might be in a given area. It might be appropriate, if this has not already been done, to provide schools with a fairly detailed template that contains the language that is recommended to be included in an RFP. This could, for example, include the standard language about seeking proposals from service providers as well as construction/purchase/IRU vendors. It could also include a section that describes the xx-year pricing comparison model that the schools will be asked to use in evaluating vendor proposals in this scenario.

Phasing Down Support for Certain Services – Paragraphs 90 to 96

Comment: We agree with phasing down of voice and other services described in Paragraphs 90-96, with the caveat that extremely rural districts have an appeal process.

While we basically agree with the concept regarding phasing out email support, we think you should get feedback from school districts to find out the extent to which they have the ability to make necessary adjustments in a timely fashion.

103. In addition to the specific services identified above, we seek comment on whether we should more fundamentally shift the way we prioritize E-rate support to emphasize and accelerate high capacity broadband connectivity to and within schools and libraries.
104. SECA recommends that the priority two ESL be "redefined to focus on ensuring that the transmission of bandwidth inside the building is sufficient, and all other functionality should no longer be eligible for support.

Comment: We agree with these approaches.

Transitioning Voice Support to Broadband – Paragraphs 105 to 110

Comment: We agree with the concept, and also agree that exceptions may need to be allowed for extremely rural, low-income, and Tribal entities.

Ensuring Equitable Access to Limited E-rate Funds
Modifying the Discount Matrix – Paragraphs 117 to 125

Comment: As we noted in our comment to Paragraph 64:
We believe the importance of secondary school job-training is paramount, and should be encouraged in all income areas except for the wealthiest communities. Consequently, we propose that the Discount Matrix be adjusted for secondary schools. The objective would be to allow more schools to receive a higher percentage discount than the current matrix. We would suggest that 40% discount become 50%; 50% become 60%; 60% become 70%; and 70% become 80% discounted.

While we understand the overall argument for reducing, not increasing, the discount matrix, we believe the importance of training secondary students for digital-age jobs is crucial to the future of the US economy and to US competitiveness in workforce abilities, especially in light of increases in college costs.

133. In order to ensure more equitable access to E-rate funding, we seek comment on whether we should further increase the discount rate or the amount of E-rate funds available for schools and libraries in rural areas or in remote rural areas.

Comment: We agree with this concept.

More Equitable Access to Funding for Internal Broadband Connections – Paragraphs 143 to 148

Comment: We strongly agree that funding for internal broadband connectivity should receive a higher priority.

Simplified Allocation of Funds to All Schools and Libraries – Paragraphs 149 to 162

Comment: We have conflicting responses to the concept of a per-student funding model, that does away with the discount matrix and priorities and instead awards fixed budgets to schools on an annual basis. On one hand, it might be a temptation for schools to spend money without having a clear idea of what they actually need. On the other hand, it would make it much easier for schools to plan technological upgrades, knowing in advance what their funding will be.

Lowering New Build Costs and Identifying Additional Funding to Support
Broadband to Schools and Libraries – Paragraphs 163 to 176
164. *Public-private partnerships.* Are there steps the Commission could take to improve the private sector business case for deploying fiber to schools and libraries, or otherwise expanding connectivity, and thereby reduce the need for E-rate funding? For example, are there steps the Commission could take to facilitate use of new fiber runs for multiple business objectives, such as backhaul for cell towers or service to other enterprise users, and thereby incent greater sharing of new construction costs?

Comment: Encouraging the shared use of broadband infrastructure is the single most important thing that the FCC could do to facilitate improvement in this country's ability to compete in the worldwide economy. In some fashion, many other countries are achieving this objective, albeit via differing approaches. In the US, broadband is still treated as a competitive market product, instead of as a necessary utility. We're sure the FCC is very familiar with the arguments, comparing, for example, broadband to transportation. Different trucking companies compete with each other, using shared roads. Different airlines compete with each other, using shared airports. This shared-infrastructure approach is needed in the broadband arena. Incentives to encouraged use of infrastructure that has received government investment from other agencies should also be encourgaged.

MAXIMIZING THE COST EFFECTIVENESS OF E-RATE FUNDS
Increasing Consortium Purchasing - Paragraphs 179 to 185

Comment: We strongly agree with the concept of encouraging consortium purchasing.

Encouraging Other Types of Bulk Buying Opportunities – Paragraphs 186 to 190

Comment: Economies of scale are certainly worthy of pursuit. One way to approach the questions in Paragraph 188 and 189 – as to whether the Commission should, via some means, create a bulk purchase laundry list, and if so, what are the rules, etc. – could be handled as follows: The bulk purchase RFP or bid asks vendors to provide pricing, using a sliding scale as to quantities. In other words, since it wouldn't be possible to guarantee how many units of each item would be purchased, ask the vendors to provide a sliding scale of prices. If xx units are purchased within a certain timeframe, the cost is yy/unit. If xxxx units are purchased, the cost is yyyy/unit. This would involve setting up some purchasing tracking systems, etc.

190. We also seek comment on whether E-rate applicants can lower costs by aggregating data

traffic.

Comment: We agree with the concept of encouraging another approach to consortium purchasing. Impediments to this in current E-rate rules would have to be addressed. Costs would have to be pro-rated or allocated within such aggregated entities as appropriate to each entity's traffic.

202. To maximize the cost-effectiveness of purchases made using E-rate funds, we seek comment on the current competitive bidding process, and ask how the Commission can reduce the number of E-rate recipients that do not receive multiple bids…

Comment: Vendors in each region/locality will need to be alerted by the school(s) that a procurement opportunity is going to become available. Vendors often cannot keep track of these opportunities. Vendors of alternate solutions (for example, construction, long-term lease, IRUs) are not used to having opportunities coming from sectors that have traditionally used only, or primarily, telco services. The Commission could be helpful in publicizing, in a general sense, that local school districts will have increased latitude in selecting connectivity solutions. School districts could be provided with an outline that briefly describes steps to be taken to increase vendor awareness of an impending procurement opportunity.

204. Currently, if an FCC Form 470 filer receives no bids, the applicant is allowed to solicit bids from service providers….Are there resources available at the state or regional level that could assist these filers in finding vendors to provide E-rate-supported services at reasonable rates? For instance, we have anecdotal evidence that E-rate applicants maybe unaware of state master contracts or cooperative purchasing organizations, such as the Western States Contracting Alliance, that could be beneficial to them. Should USAC post guidance on its website or take other steps to assist E-rate applicants in finding these resources?

Comment: We agree that it would be helpful if USAC posted on its website or took other steps to assist E-rate applicants in finding resources.

Innovative Approaches to Encouraging Maximum Efficiency – Paragraphs 220 to 223

Comment: We encourage the use of Pilot Programs such as described in Paragraph 221, which could ease the process along, test the revised paradigms, and provide some lessons learned, as the Pilot Program for the Rural Health Care sector appears to have accomplished.